

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (previously presented) A messaging system, comprising:
 - a client device having stored therein a client application adapted to be executed by said client device;
 - a server having stored therein a server application adapted to be executed by said server;
 - a plurality of wireless networks adapted to communicate messages between said client device and said server and support one or more wireless network protocols;
 - a protocol gateway to encapsulate a fundamental network protocol underlining each of said one or more wireless network protocols;
 - means for communicating a message between said client application and said server application, over a selected wireless network protocol through said protocol gateway, independent of said selected wireless network protocol; and
 - a message router for routing said message between said protocol gateway and said server, said message router including:
 - means for authenticating an origin of said message, wherein said authenticating means authenticates said origin before said message is routed by said message router; and
 - a database accessible by said message router and adapted to store information relating to routing and authentication of said message.

2. (previously presented) The messaging system according to claim 1, further comprising:

a simple network transport layer application adapted to be executed by said protocol gateway and including a first code segment for defining a maximum segment size, a second code segment for determining if said message exceeds said maximum segment size, and a third code segment for segmenting said message into a plurality of message segments, none of said message segments exceeding said maximum segment size.

3. (previously presented) The messaging system according to claim 2, further comprising:

means for supporting a message retry in each of said wireless network protocols.

4. (original) The messaging system according to claim 2, further comprising:

means for supporting a message ACK/NACK service in each of said wireless network protocols.

5. (previously presented) A method of communicating a message over a plurality of wireless networks between a client device having stored therein a client application adapted to be executed by the client device and a server having stored therein a server application adapted to be executed by the server, each of said plurality of wireless networks is adapted to support one or more wireless network protocols, said method comprising the steps of:

providing a remotely manageable protocol gateway;

encapsulating a fundamental network protocol by said protocol gateway, said fundamental network protocol underlies each of said one or more wireless network protocols communicating said message between said client application and said server application over a selected wireless network protocol through said remotely manageable protocol gateway independent of said selected wireless network protocol; and

providing a message router for routing said message between said remotely manageable protocol gateway and said server.

6. (previously presented) The method according to claim 5, further comprising:

authenticating an origin of said message.

7. (previously presented) The method according to claim 6, wherein:

said authenticating step is performed by said message router before said message is routed between said remotely manageable protocol gateway and said server.

8. (previously presented) The method according to claim 6, further comprising:

providing a database accessible by said message router; and
storing in said database information relating to routing and authentication of said message.

9. (previously presented) The method according to claim 5, further comprising:

providing a simple network transport layer (SNTL) application, wherein said SNTL application is adapted to be executed by said remotely manageable protocol gateway;

defining a maximum segment size;

determining if said message exceeds said maximum segment size;

and

segmenting said message into a plurality of message segments, none of said message segments exceeding said maximum segment size.

10. (previously presented) The method according to claim 5, further comprising:

supporting a message retry in each of said wireless network protocols.

11. (previously presented) The method according to claim 5, further comprising:

supporting a message ACK/NACK service in each of said wireless network protocols.

12. (previously presented) A method of routing a message in a communications system, comprising:

- providing a server adapted to run a server application;
- providing a plurality of message routers coupled to said server;
- providing a plurality of protocol gateways coupled to each one of said plurality of message routers; and

- providing a wireless network adapted to couple said server through one or more of said plurality of message routers and one or more of said plurality of protocol gateways to a plurality of client devices, each of said client devices adapted to run a client application;

- transmitting said message from one of said plurality of client devices:

- defining a maximum segment size by said one of said plurality of client devices;

- determining if said message exceeds said maximum segment size by said one of said plurality of client devices;

- segmenting said message into one or more message segments by said one of said plurality of client devices, none of said message segments exceeding said maximum segment size;

- receiving said message at one of said plurality of protocol gateways;

- transmitting from said one of said plurality of protocol gateways to said one of said plurality of client devices a first acknowledgment message acknowledging receipt of at least one message segment by said one of said plurality of protocol gateways;

- determining that said at least one message segment constitutes a complete message by said one of said plurality of client devices;

- if said at least one message segment constitutes a complete message as determined by said one of said plurality of client devices, transmitting from said one of said plurality of protocol gateways to one of said plurality of message routers said complete message; and

routing said complete message to said server by said one of said plurality of message routers.

13. (previously presented) The method according to claim 12, further comprising:

transmitting from said server to said one of said plurality of message routers a second acknowledgment message acknowledging receipt of at least one message segment by said one of said plurality of protocol gateways;

receiving said second acknowledgment message at said one of said plurality of message routers and routing said second acknowledgment message to said one of said plurality of protocol gateways;

receiving from said one of said plurality of message routers said second acknowledgment message at said one of said plurality of protocol gateways; and

transmitting said second acknowledgment message from said one of said plurality of protocol gateways to said one of said plurality of client devices transmitting said message.

14. (previously presented) The method according to claim 12, wherein:

if a size exceeds said maximum segment size, segmenting said message into a first message segment and a second message segment, neither of said first message segment and said second message segment exceeds said maximum segment size;

transmitting from said one of said plurality of protocol gateways to said one of said plurality of client devices a first acknowledgment message acknowledging receipt of said first message segment by said one of said plurality of protocol gateways;

receiving said first acknowledgment message at said one of said plurality of client devices;

determining by said one of said plurality of client device that said second message segment was not received by said one of said plurality of protocol gateways;

retransmitting from said one of said plurality of client devices to said one of said plurality of protocol gateways said second message segment; and

receiving said retransmitted second message segment at said one of said plurality of protocol gateways; and

transmitting from said one of said plurality of protocol gateways to said one of said plurality of client devices a second acknowledgment message acknowledging receipt of said second message segment by said one of said plurality of protocol gateways.

15. (previously presented) The method according to claim 14, further comprising:

determining by said one of said plurality of protocol gateways that said first message segment and said second message segment comprises a complete message; and

transmitting a complete message acknowledgment message from said one of said plurality of protocol gateways to said one of said plurality of client devices upon receipt of said retransmitted second message segment by said one of said plurality of protocol gateways.

16. (previously presented) A method of routing a message in a communications system, comprising:

- providing a server adapted to run a server application;
- providing a plurality of message routers coupled to said server;
- providing a plurality of protocol gateways coupled to each one of said plurality of message routers; and

- providing a wireless network adapted to couple said server through one or more of said plurality of message routers and one or more of said plurality of protocol gateways to a plurality of client devices, each of said client devices adapted to run a client application;

- transmitting said message from said server to one of said plurality of message routers;

- receiving said message at said one of said plurality of message routers, and routing said message to one of said plurality of protocol gateways;

- defining a maximum segment size by said one of said plurality of protocol gateways;

- determining if said message exceeds said maximum segment size by said one of said plurality of protocol gateways;

- segmenting said message into one or more message segments by said one of said plurality of protocol gateways, none of said message segments exceeds said maximum segment size;

- receiving said message at one of said plurality of protocol gateways;

- transmitting said message from said one of said plurality of protocol gateways to said one of said plurality of client devices;

- receiving said message at said one of said plurality of client devices;

- transmitting an acknowledgment message from said one of said plurality of client devices to said one of said plurality of protocol gateways, said acknowledgment message acknowledges receipt of at least one message segment by said one of said plurality of client devices; and

determining that said at least one message segment constitutes a complete message by said one of said plurality of client devices.

17. (previously presented) The method according to claim 16, wherein:

if a size exceeds said maximum segment size, segmenting said message into a first message segment and a second message segment by said one of said plurality of protocol gateway, neither of said first message segment and said second message segment exceeds said maximum segment size;

transmitting from said one of said plurality of protocol gateways to said one of said plurality of client devices said first message segment and said second message segment;

receiving said first message segment at said one of said plurality of client devices;

transmitting from said one of said plurality of client devices to said one of said protocol gateways a first acknowledgment message acknowledging receipt of said first message segment by said one of said plurality of client devices;

determining that said second message segment was not received by said one of said plurality of client devices by said one of said plurality of protocol gateways;

retransmitting from said one of said plurality of protocol gateways to said one of said plurality of client devices said second message segment;

receiving said retransmitted second message segment at said one of said plurality of client devices; and

transmitting from said one of said plurality of client devices to said one of said plurality of protocol gateways a second acknowledgment message, said second acknowledgment message acknowledges receipt of said second message segment by said one of said plurality of client devices.

18. (previously presented) The method according to claim 16, further comprising:

determining by said one of said plurality of protocol gateways that said first message segment and said second message segment comprises a complete message; and

transmitting a complete message acknowledgment message from said one of said plurality of protocol gateways to said one of said plurality of client devices upon receipt of said retransmitted second message segment by said one of said plurality of client devices.

19. (previously presented) A message router for routing a message between a protocol gateway and a server, the message router comprising:

an authenticator to authenticate an origin of said message, said authenticator authenticating said origin of said message before said message is routed by said message router between a protocol gateway and a server; and

a database accessible by said message router and adapted to store information relating to routing and authentication of said message.

20. (previously presented) The message router according to claim 19, wherein:

said message is routed to a least recently used protocol gateway.

21. (previously presented) The message router according to claim 19, wherein:

said message is routed to said message router if said message router is a least recently used message router.

22. (previously presented) The message router according to claim 19, wherein:

said message router routes said message to a most specific server corresponding to a message key.

23. (previously presented) The message router according to claim 19, wherein:

said message router routes said message based on a content of said message.

24. (previously presented) A method of routing a message between a protocol gateway and a server comprising:

authenticating an origin of said message before said message is routed by said message router between a protocol gateway and a server;

accessing a database by said message router; and

storing information relating to routing and authentication of said message.

25. (previously presented) The method of routing a message according to claim 24, further comprising:

routing said message to a least recently used protocol gateway.

26. (previously presented) The method of routing a message according to claim 24, further comprising:

routing said message to said message router if said message router is a least recently used message router.

27. (previously presented) The method of routing a message according to claim 24, further comprising:

routing said message to a most specific server corresponding to a message key.

28. (previously presented) The method of routing a message according to claim 24, further comprising:

routing said message based on a content of said message.

29. (previously presented) An apparatus for routing a message between a protocol gateway and a server comprising:

means for authenticating an origin of said message before said message is routed by said message router between a protocol gateway and a server;

means for accessing a database by said message router; and

means for storing information relating to routing and authentication of said message.

30. (previously presented) The apparatus for routing a message according to claim 29, further comprising:

means for routing said message to a least recently used protocol gateway.

31. (previously presented) The apparatus for routing a message according to claim 29, further comprising:

means for routing said message to said message router if said message router is a least recently used message router.

32. (previously presented) The apparatus for routing a message according to claim 29, further comprising:

means for routing said message to a most specific server corresponding to a message key.

33. (previously presented) The apparatus for routing a message according to claim 29, further comprising:

means for routing said message based on a content of said message.

34. (currently amended) A system for communicating a message over a plurality of networks between a client device and a server comprising:

said client device to execute a client application;

said server to execute a server application; and

a remotely manageable protocol gateway to encapsulate a fundamental network protocol ~~underling~~ underlying each of a plurality of network protocols communicating said message between said client application and said server application over a selected wireless network protocol through said remotely manageable protocol gateway independent of said selected wireless network protocol.

35. (previously presented) The system for communicating a message over a plurality of networks between a client device and a server, according to claim 34 further comprising:

a message router to route a message between said client application and said server application, said message router located between said remotely manageable protocol gateway and said server.

36. (currently amended) A method of routing a message in a communications system, comprising:

defining a maximum segment size by a client device;

determining if a message exceeds a maximum segment size by said client device;

segmenting said message into one or more message segments by said client device, none of said message segments exceeding said maximum segment size; and

if said message segment constitutes a complete message as determined said client device, transmitting from said protocol gateways to a message router said complete message

37. (previously presented) The method according to claim 36, further comprising:

if a size exceeds said maximum segment size, segmenting said message into a first message segment and a second message segment, neither of said first message segment and said second message segment exceeds said maximum segment size.

38. (previously presented) The method according to claim 37, further comprising:

determining by said protocol gateway that said first message segment and said second message segment comprises a complete message.

39. (previously presented) A method of routing a message in a communications system, comprising:

defining a maximum segment size by a protocol gateway;

determining if a message exceeds a maximum segment size by said protocol gateway;

segmenting said message into one or more message segments by said protocol gateway, none of said message segments exceeding said maximum segment size; and

determining by said client device that said message segment constitutes a complete message.

40. (previously presented) The method according to claim 39, further comprising:

if a size exceeds said maximum segment size, segmenting said message into a first message segment and a second message segment, neither of said first message segment and said second message segment exceeds said maximum segment size.

41. (previously presented) The method according to claim 40, further comprising:

determining by said protocol gateway that said first message segment and said second message segment comprises a complete message.